

of said chamber means, said downstream coupling means having an outlet means;

a hollow needle means disposed in said chamber means for coupling said upstream coupling means to said downstream coupling means;

a plug means through which said needle means can be moved; said plug means being made of a material that has closure properties when the needle is not passing through it;

resilient means disposed in said chamber means for urging said plug means to a downstream closure position where said plug means closes said downstream coupling means and where said needle means does not pass through the plug such that said outlet means is completely filled by ^{said material of} said plug, thereby preventing any dead volume at the end of said downstream coupling means and preventing bacteria entering said connector through said downstream coupling means; and

activating means inserted in said downstream coupling means for moving said plug means towards an upstream open position where said needle means does pass through said plug means.

²¹
23. A connector according to claim ²⁰ 22 wherein said ~~resilient means is a spring~~ ^{is a helical spring}